9445.1993(09)

INAPPROPRIATE USE OF METHOD 1311 (TCLP) AS AN ALTERNATIVE EXTRACTION PROCEDURE

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

December 7, 1993

Ms. Mickey Owens
President
SOS Environmental, Inc.
13800 Thermal Drive
Austin, Texas 78728

This letter is in response to your inquiry of December 1, 1993, about the use of Method 1311 as an alternate extraction procedure for total petroleum hydrocarbons (TPH) in soils. The fact that we are not able to respond within the unrealistic timeframe specified in your letter, does not in any way affect your obligations under the RCRA regulations.

In response to your specific questions, I would like to clarify that Method 1311-Toxicity Characteristic Leaching Procedure (TCLP) is not an extraction procedure, but a leaching procedure. It was not designed as a sample preparation extraction method, which maximizes analyte removal from a solid matrix, but as a measure of how much of the target analytes may leach from a waste in a landfill into the groundwater, due to rain and other environmental factors. Therefore, TCLP is not an appropriate sample preparation procedure either for extractable TPH or for volatile TPH fractions such as gasoline. It is neither equivalent to the sample preparation procedures in the following paragraphs, nor is it an adequate sample preparation method for TPH in soils.

In our opinion, the appropriate methods to be used for the preparation of extractable TPH in soils are Method 3540-Soxhlet Extraction, Method 3541-Automated Soxhlet Extraction, or Method 3560-Supercritical Fluid Extraction (SFE). Methods 3540 and 3541, using pentane as the extraction solvent, are appropriate for the preparation of samples from which the TPH is to be determined only by gas chromatography with flame ionization detection (GC/FID)

(Method 8015B). Method 3560 is appropriate for the preparation of samples from which the TPH is to be determined either by GC/FID (Method 8015B) or by Infrared Spectroscopy (IR) (Method 8440).

Also, in our opinion, the appropriate methods to be used for volatile TPH in soils are closed-system purge-and-trap (Method 5035) as the preparative method, followed by GC/FID (Method 8015B) as the determinative method. Aromatic gasoline fractions (BTEX) can be determined by GC simultaneously with TPH by using a photoionization detector (PID) (Method 8021) in series with the FID (Method 8015B).

If you have any further questions, or want to request copies of the methods mentioned above, please call the Methods Section Office at 202-260-4761.

Sincerely,
Barry Lesnik, Chemist
Methods Section (5304)
RCRA Organic Methods Program Manager